Clean Air Interstate Rule




OVERVIEW PRESENTATION

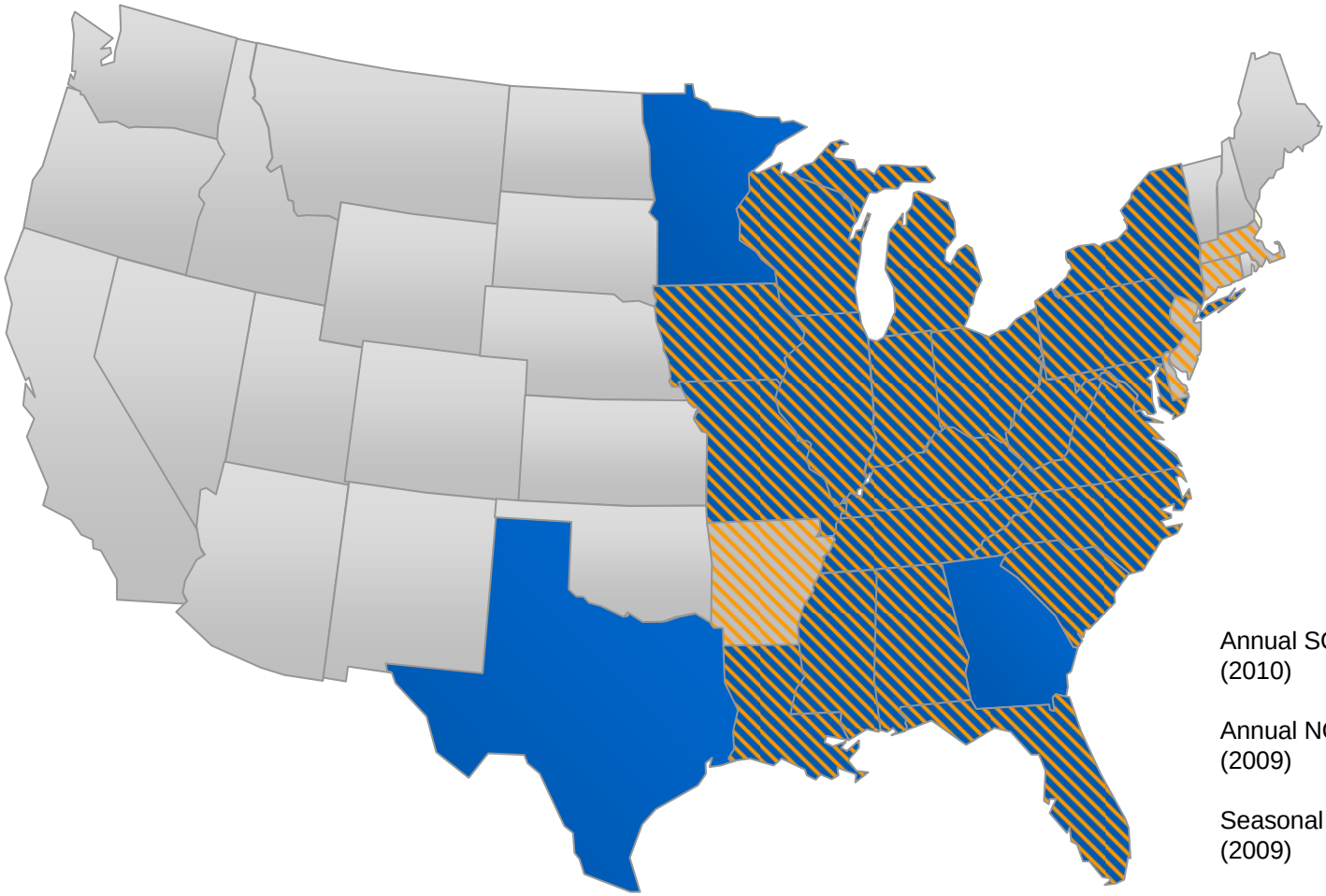
REGIONS V AND VII CAIR WORKSHOP

June 2005

CAIR Approach

- Analyze sources of SO_2 (for $PM_{2.5}$) and NO_x (for $PM_{2.5}$ and ozone).
- Determine if a **significant contribution** is projected from individual states on ozone and PM nonattainment in 2010, to define **geographic boundaries** covered by the rule.
- Allow cost-effective approach for regional reductions, propose an **optional cap-and-trade program** similar to current Acid Rain Program for SO_2 (Title IV) and the NO_x SIP call.
- EPA develops an **emissions budget for each state** based on application of highly effective controls on electric generating units in a cap and trade program, that includes all affected states. States have discretion in deciding which sources to control to meet the budget.
- Provide the most timely reductions; propose a **two-phase program** with declining compliance caps for NO_x in 2009 and 2015, and for SO_2 in 2010 and 2015.

CAIR: Affected Region and Emission Caps



Emission Caps*
(million tons)

	2009/2010	2015
Annual SO_2 (2010)	3.6	2.5
Annual NO_x (2009)	1.5	1.3
Seasonal NO_x (2009)	.58	.48

**For the affected region.*

States controlled for fine particles (annual SO_2 and NO_x)

States controlled for ozone (ozone season NO_x)

States controlled for both fine particles (annual SO_2 and NO_x) and ozone (ozone season NO_x)

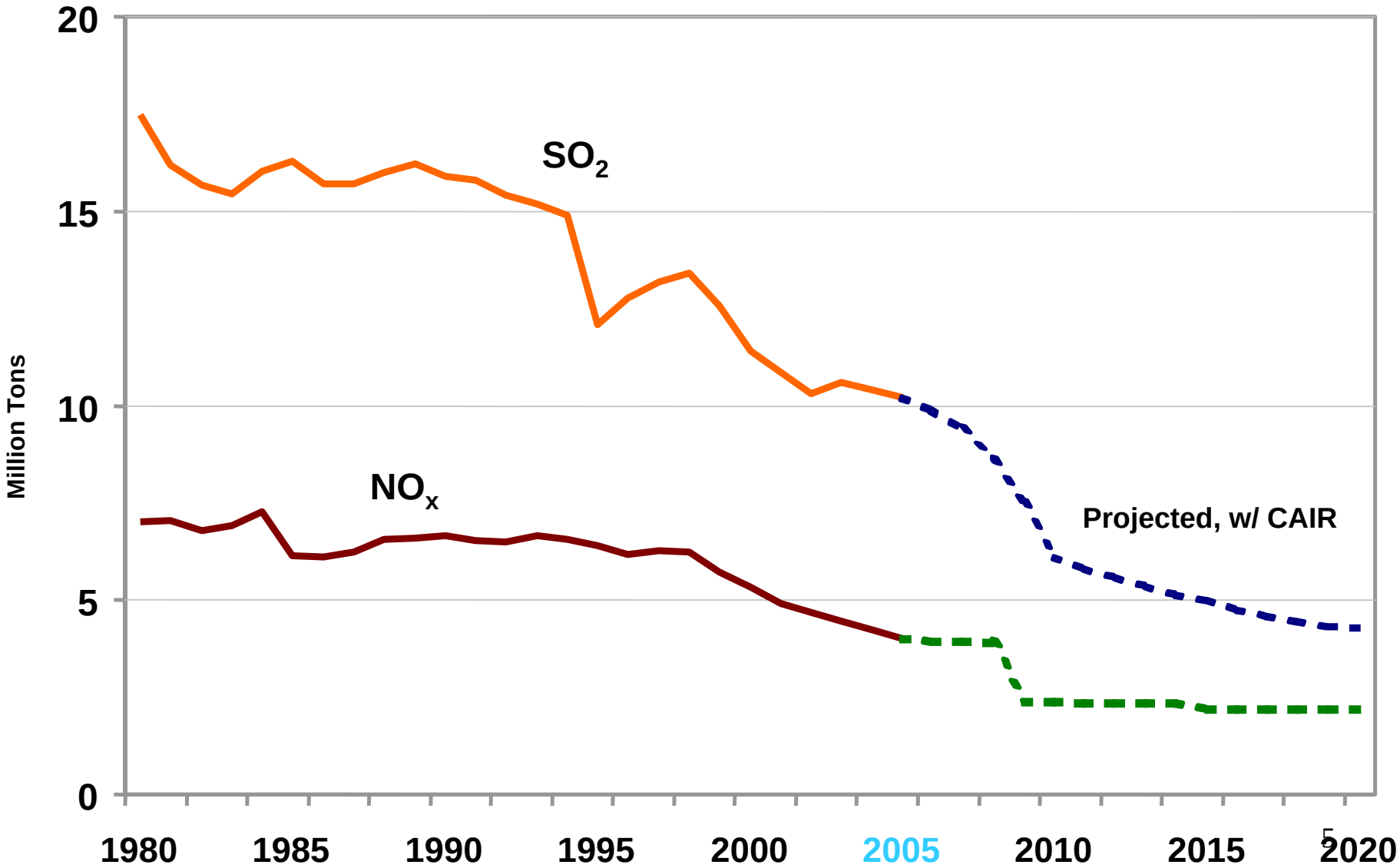
States not covered by CAIR

Emission Reductions from CAIR

Annual Reductions in the CAIR Region

	2009/2010	2015	2020
SO_2	3.5 million tons	3.8 million tons	4.3 million tons
NO_x	1.2 million tons	1.5 million tons	1.5 million tons

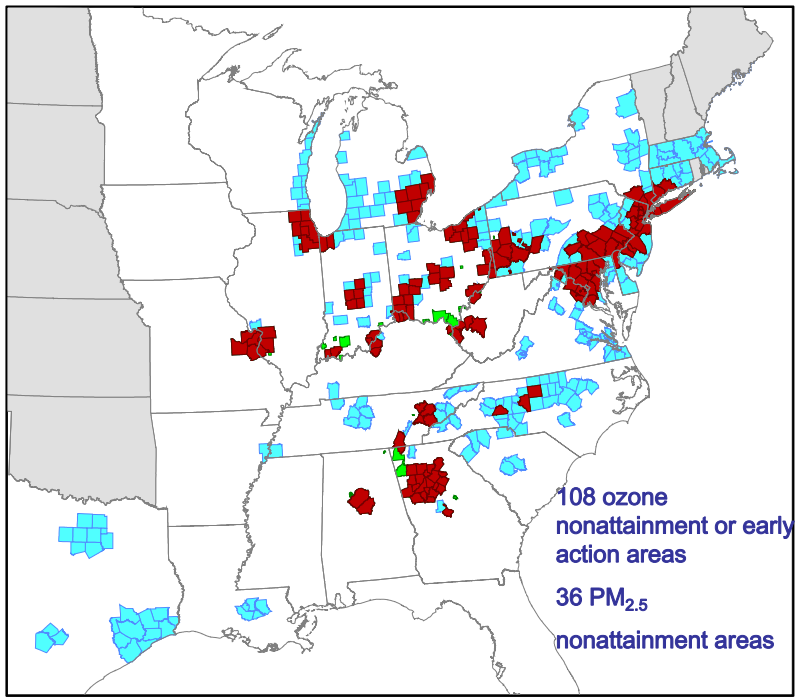
National NO_x and SO_2 Power Plant Emissions: Historic and Projected with CAIR



Source: EPA

Ozone and PM Attainment Forecast with CAIR and with Other Clean Air Programs – Eastern U.S. -- 2015

Ozone and Fine Particle Nonattainment Areas* (April 2005)

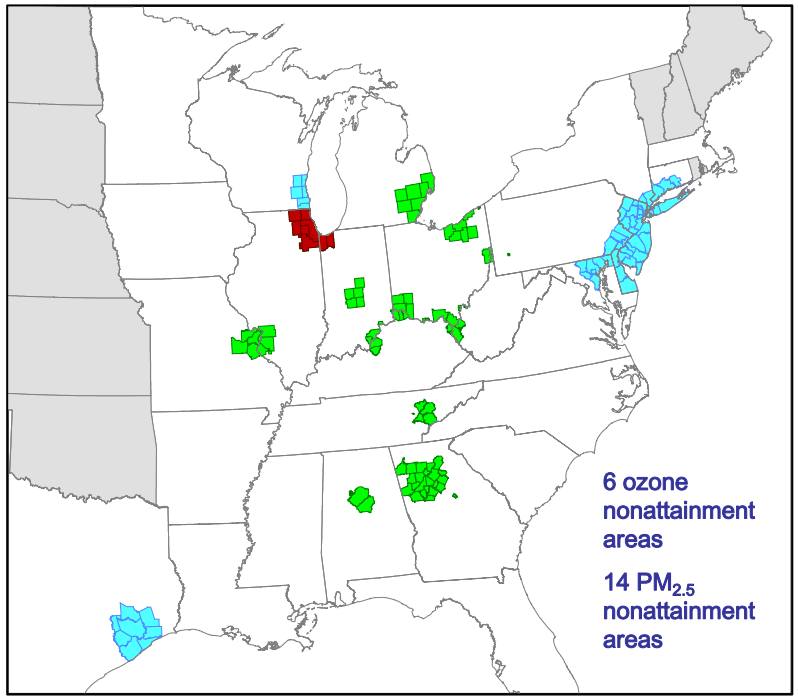


Nonattainment areas for 8-hour ozone pollution only

Nonattainment areas for fine particle pollution only

Nonattainment areas for both 8-hour ozone and fine particle pollution

Projected Nonattainment Areas* in 2015 after Reductions from CAIR and Existing Clean Air Act Programs

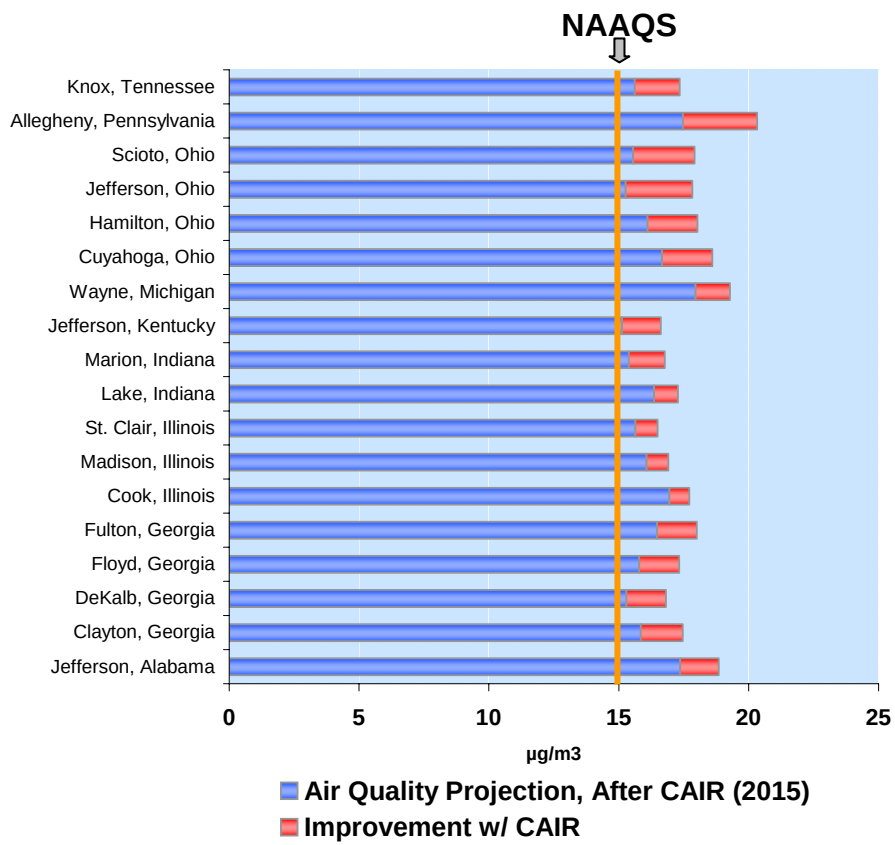


*Although tallies include all nonattainment areas in the eastern U.S., maps show only those areas in States covered by CAIR. Four current O^3 nonattainment areas in New England are not pictured.

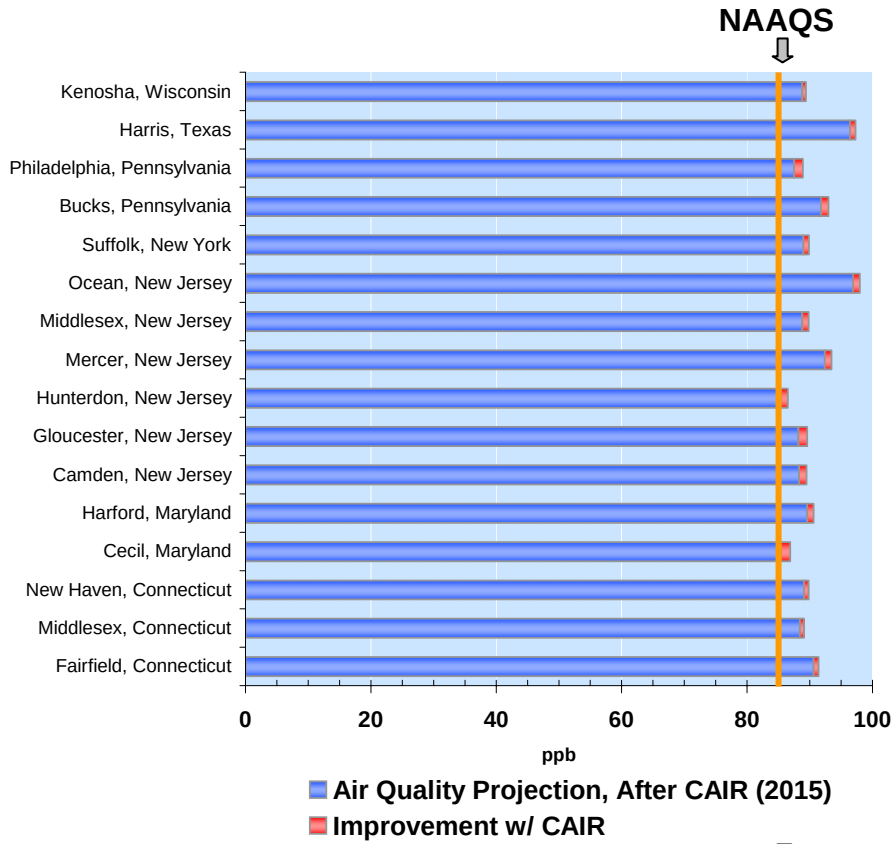
Projections concerning future levels of air pollution in specific geographic locations were estimated using the best scientific models available. They are estimations, however, and should be characterized as such in any description. Actual results may vary significantly if any of the factors that influence air quality differ from the assumed values used in the projections shown here.

CAIR: Counties Closer to Attainment w/ NAAQS

Remaining Fine Particle Nonattainment (Annual Fine Particle Standard)



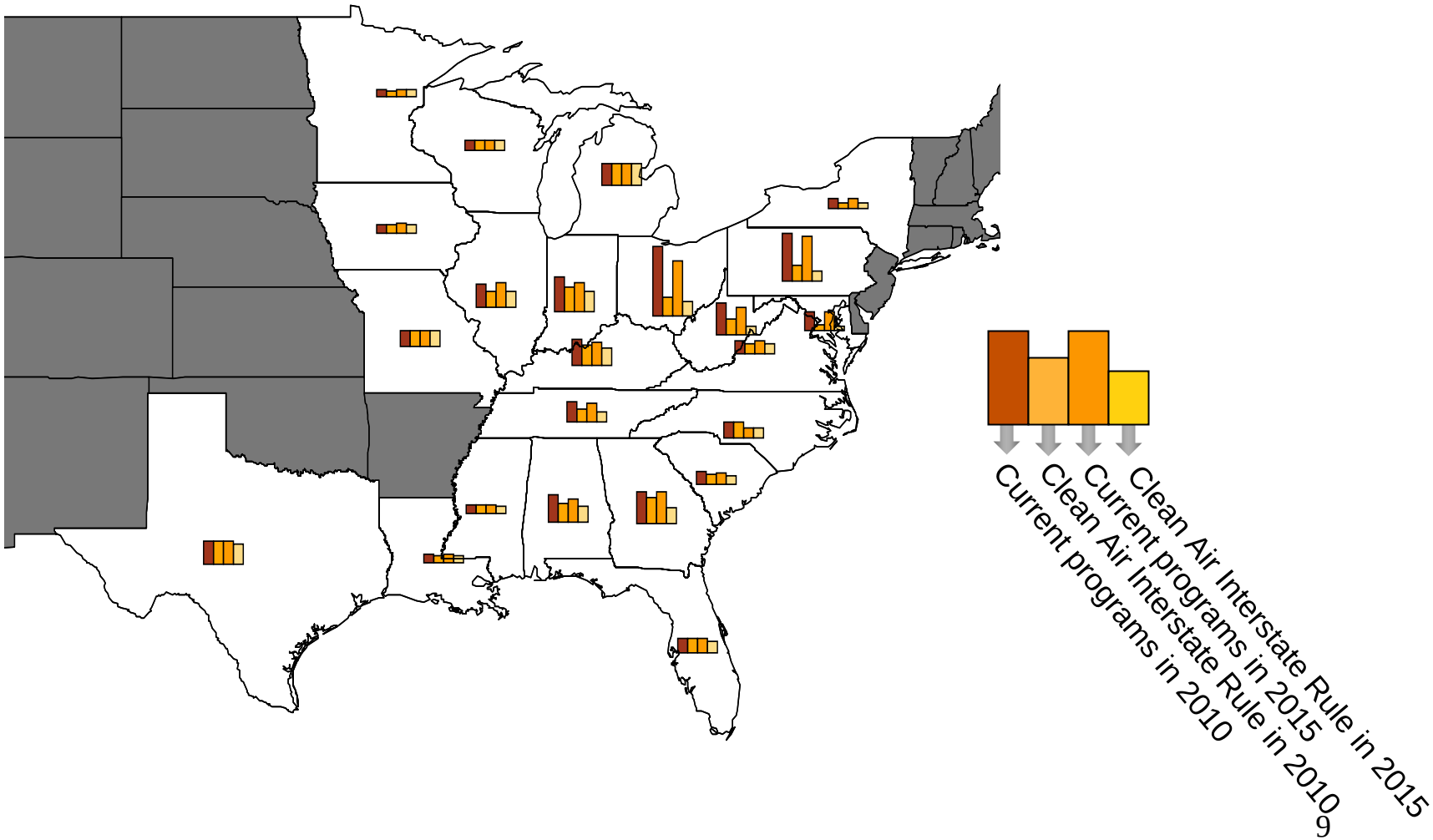
Remaining Ozone Nonattainment (8-Hour Ozone Standard)



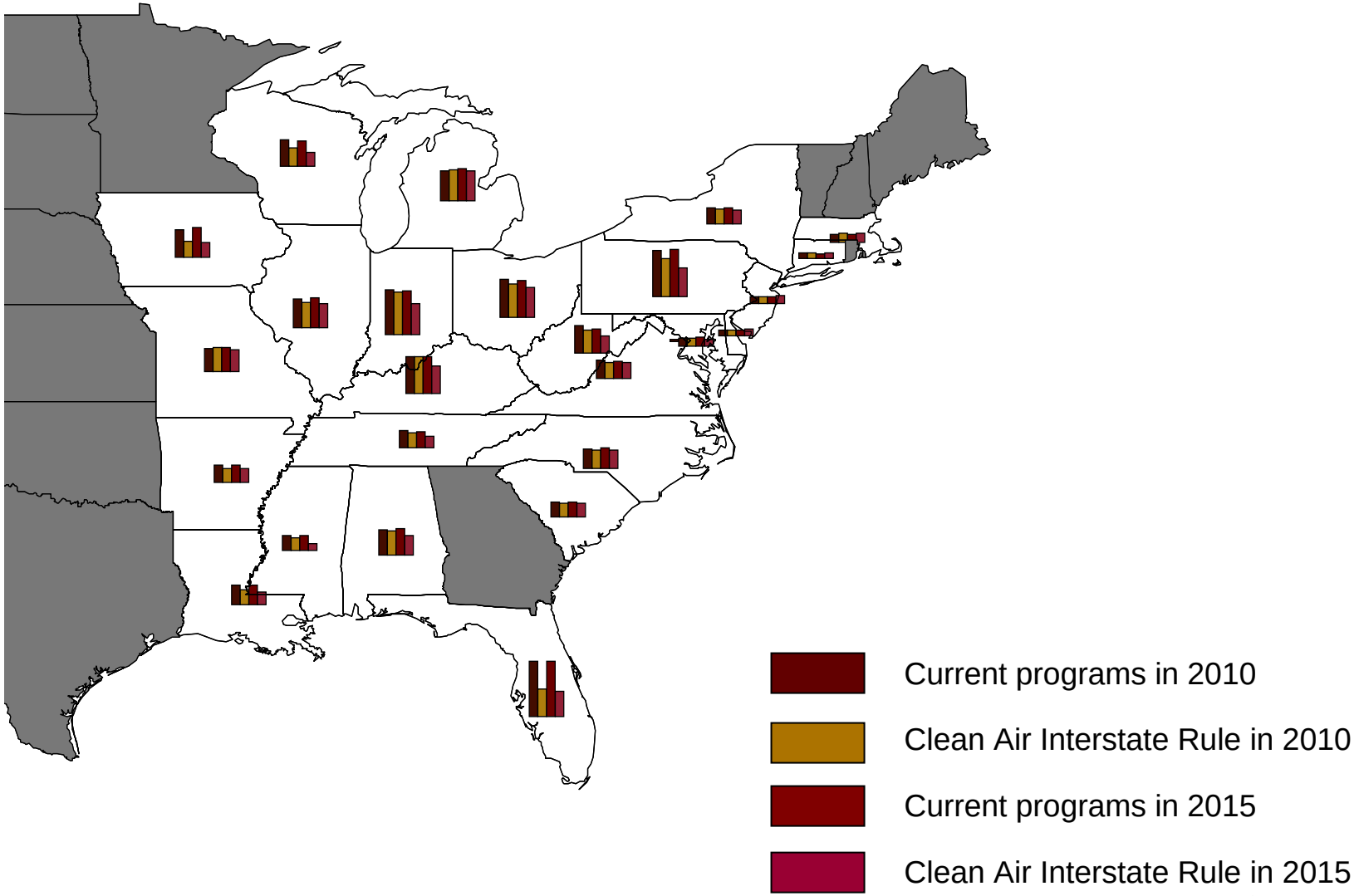
CAIR Health and Environmental Benefits: Benefits over 25 Times Greater than Costs

- **By 2015, CAIR will result in $85-100 billion in health benefits each year, preventing:**
  - **17,000 premature deaths**
  - **22,000 non-fatal heart attacks**
  - **12,300 hospital admissions**
  - **1.7 million lost work days**
  - **500,000 lost school days.**
- **Almost $2 billion in improved visibility benefits each year.**
- **Other non-monetizable benefits – reductions of mercury emissions, acid rain, nitrification, eutrophication, and more.**
- **In 2015, CAIR will cost about $3.6 billion a year. Implementation beyond 2015 leads to higher annual benefits and costs.**

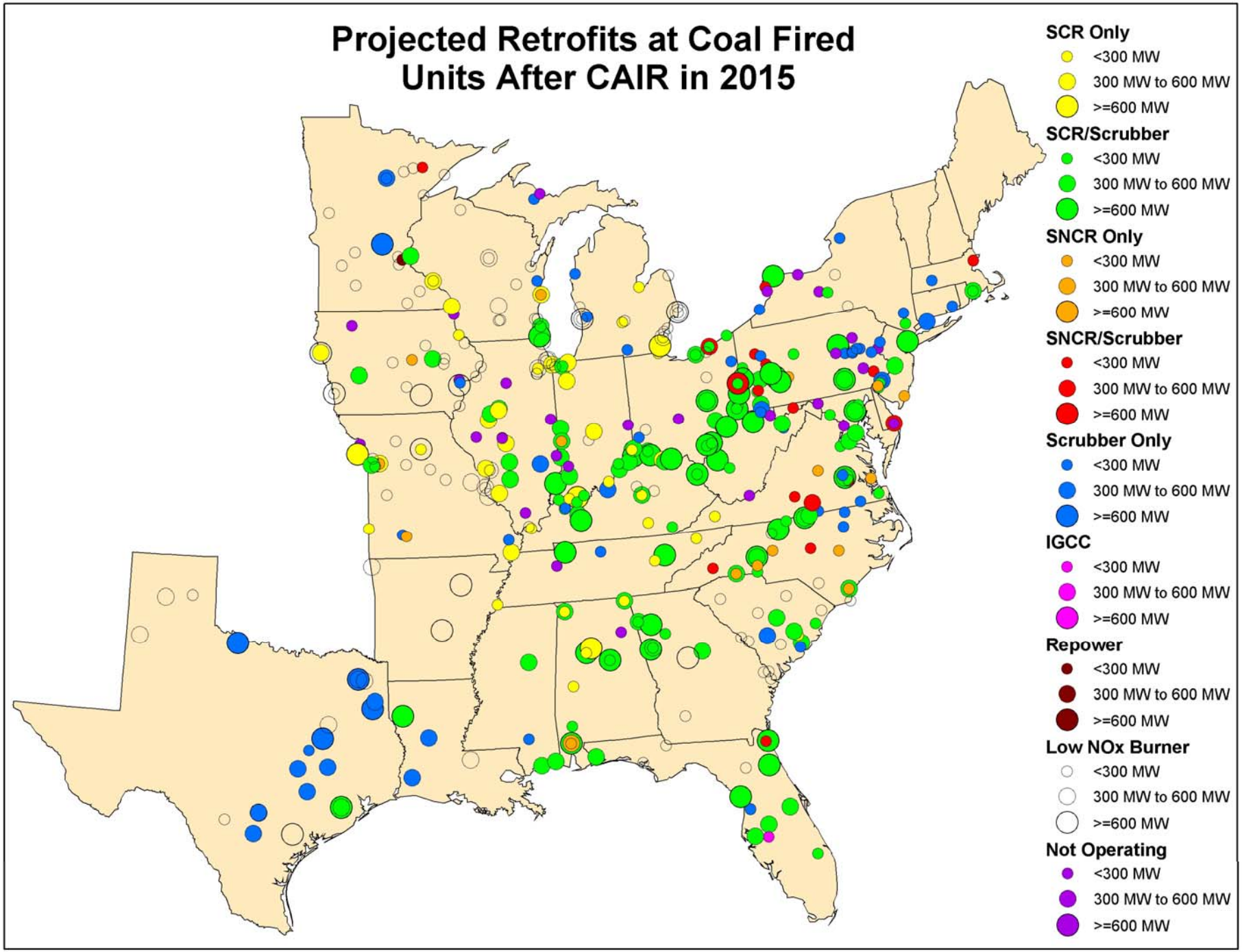
Projected Annual SO_2 Emissions for Power Plants Under CAIR



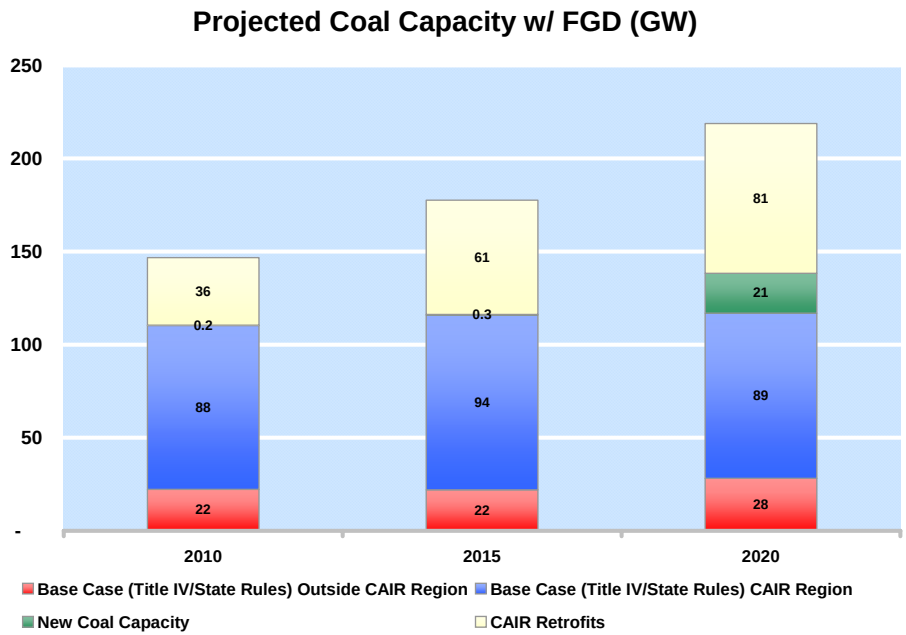
Projected Ozone Season NOx Emissions for Power Plants under CAIR

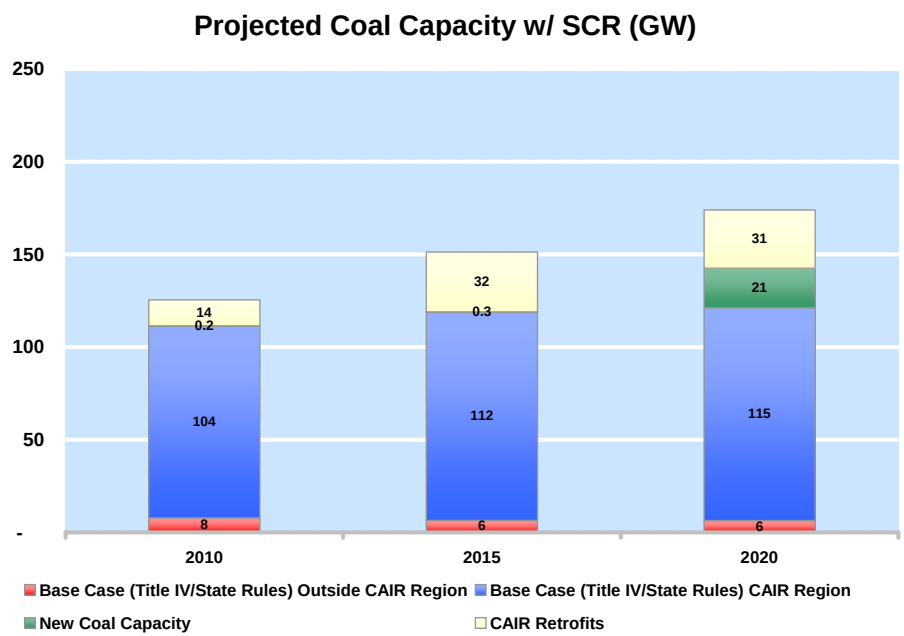


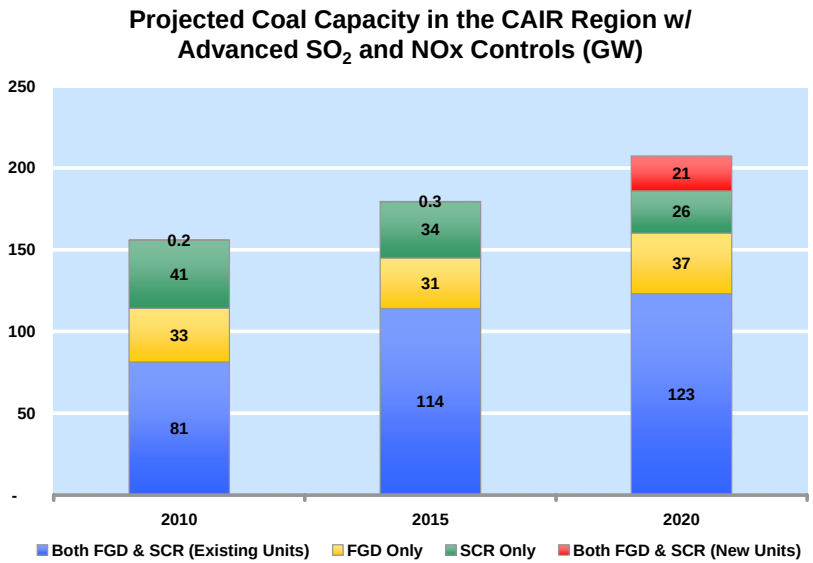
Projected Retrofits at Coal Fired Units After CAIR in 2015



CAIR: Capacity w/ Advanced Pollution Controls



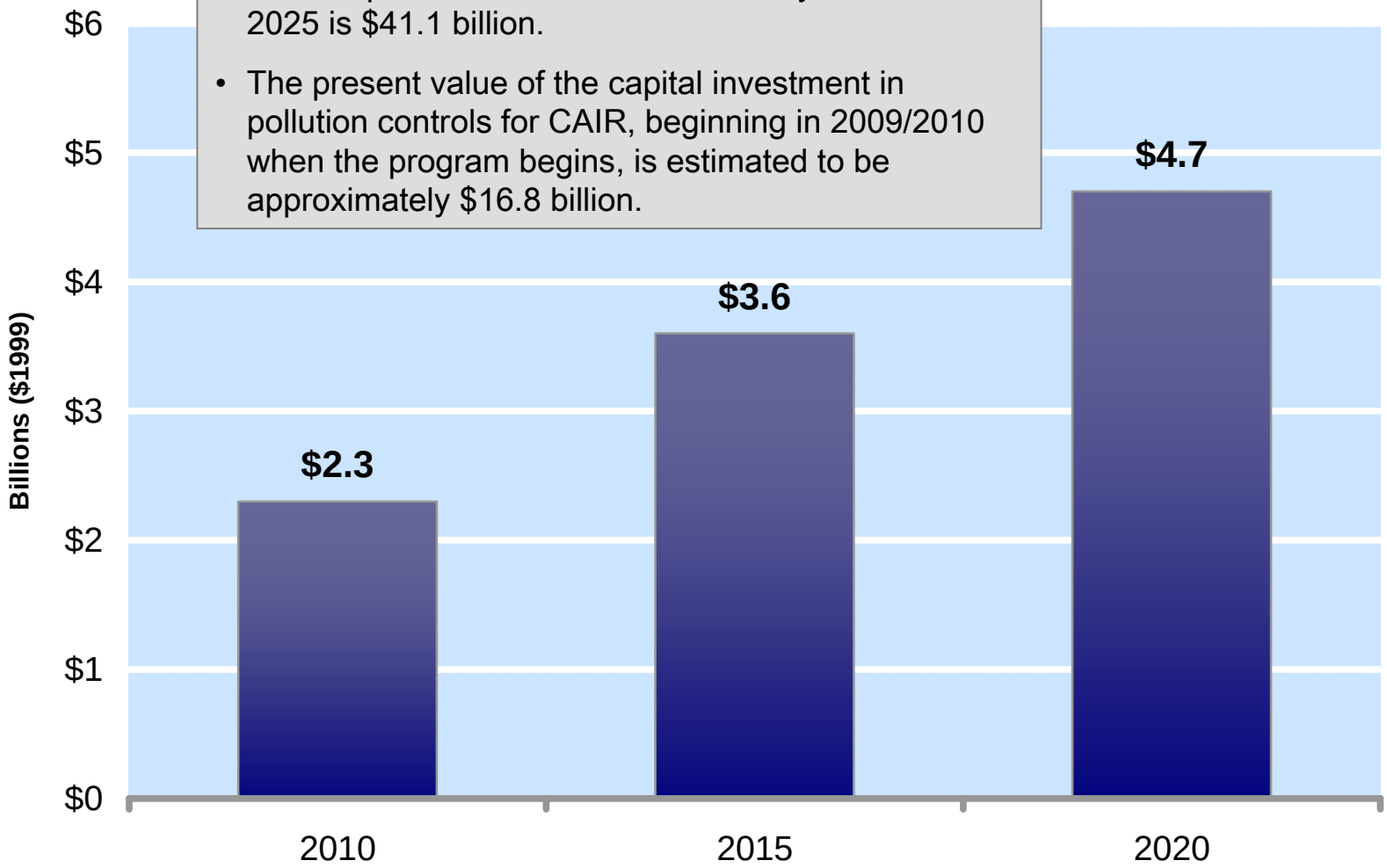




Coal Capacity (GW)			
	2010	2015	2020
CAIR Region	244	243	252
National	302	302	318

Annualized Private Cost of CAIR

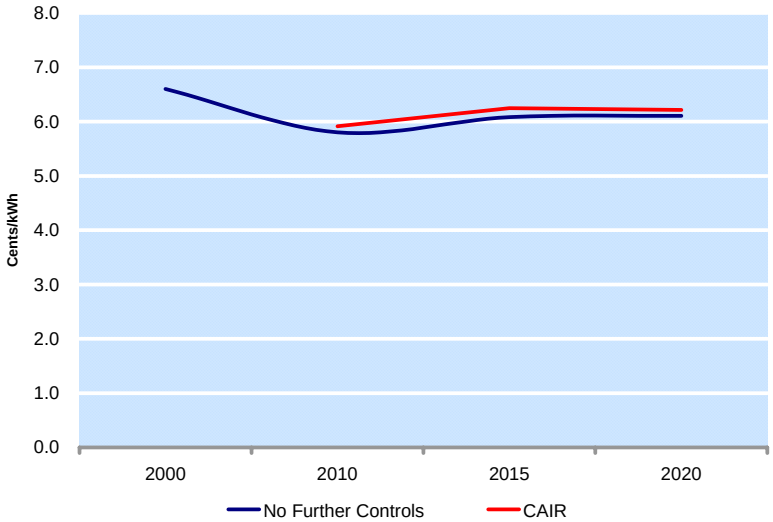
- The net present value of CAIR for the years 2007-2025 is $41.1 billion.
- The present value of the capital investment in pollution controls for CAIR, beginning in 2009/2010 when the program begins, is estimated to be approximately $16.8 billion.



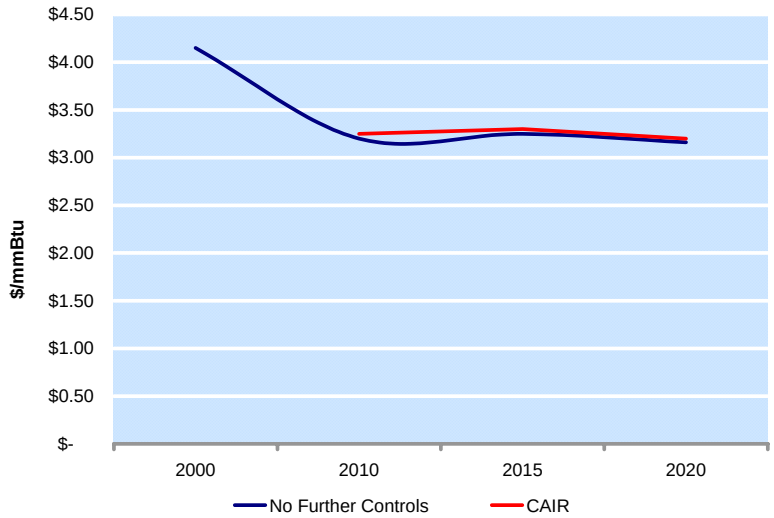
Note: From IPM, for the affected region.

Other Projected Impacts

Regional Retail Electricity Prices

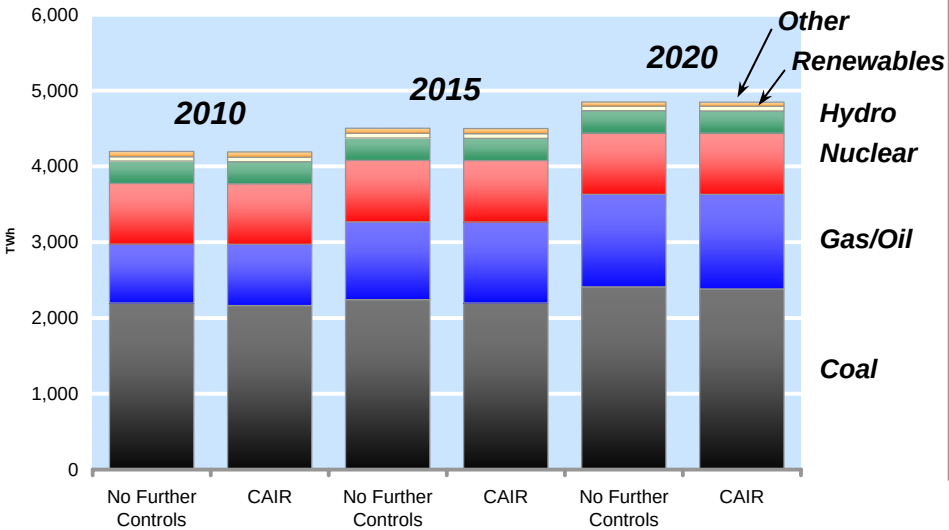


Natural Gas Prices



Note: Henry Hub prices

Generation Mix



Coal Production for Electricity Generation (million tons)

			CAIR	
	2000	2003	2010	2015
Appalachia	299	275	306	306
Interior	131	135	165	191
West	475	526	607	586
National	905	936	1,078	1,083

Note: Retail prices for 2000 are from AEO2003. Natural Gas prices for 2000 are from Platts GASdat. All other data is from EPA's Integrated Planning Model.

Section 126 and FIP

- Section 126
  - In March 2004, North Carolina filed a Section 126 petition claiming that large EGUs in a number of States were contributing to non-attainment in North Carolina
  - In March 2005, the agency entered into a consent decree with North Carolina agreeing to a schedule to respond to the petition
  - EPA is required to propose action by August 1, 2005 + propose the FIP

- FIP - In the final CAIR rulemaking, the agency indicated its intent to move forward with a FIP for any State that did not meet the requirements of CAIR.

To Learn More…..

Clean Air Interstate Rule

www.epa.gov/cleanairinterstaterule